

## Remarks

Claims 1, 7, 13 and 14 are pending in the subject application and are now presented to the Examiner for further review. Favorable consideration of these claims, in view of the remarks set forth herein, is earnestly solicited.

Claims 1, 7, 13 and 14 have been rejected under 35 USC §112, first paragraph, as being non-enabled. The applicants respectfully traverse this ground for rejection because the skilled artisan could readily, and without undue experimentation, practice the full scope of the applicants' claims.

The applicants appreciate the Examiner's withdrawal of the portion of this rejection that had pertained to the previous recitation of "pharmaceutical" in claim 7.

The aspect of this enablement rejection that pertains to the recitation of "fragments" has, however, been maintained. In maintaining this rejection, the Office Action states, at page 4 "[e]ven though the peptides are bicyclic, the fragments will result in a infinite number of sequences." The applicants respectfully disagree with this statement.

The limitation of the claimed peptides to bicyclic form significantly limits the number of "fragments" that are encompassed by the claims. SEQ ID NO:2 has four cysteine residues that must be present in order for the peptide to be in bicyclic form. Accordingly, the minimum size of the claimed peptide is only six amino acids less than the full length sequence. Certainly, it would be very straightforward for the highly skilled artisan to test this limited number of peptides, as described in the subject application, to confirm their neuropilin-1 antagonist activity.

The Office Action states that even if the recitation of the bicyclic form results in the smallest fragment retaining 22 of the 28 amino acids, undue experimentation would still be needed to ascertain which fragments retain NP-1 antagonist activity. In making this determination, the Office Action states that little guidance has been provided with regard to "the positions in the peptide, which are tolerant to change, and the nature and extent of changes that can be made in these positions." However, because the applicants' claims merely recite "fragments" (not, for example, "variants"), there appears to be no reason to be concerned with "the nature and extent" of the possible changes. Either the full length sequence is present, or from 1 to 6 amino acids are removed from the ends. Thus, the number of claimed peptides is not only finite, it is really quite small.

In any event, the sheer number of compounds which may fall within the scope of a claim is not determinative of the enablement of the specification. See, e.g., *In re Angstadt*, 537 F.2d 498, 190 USPQ 214 (CCPA 1976), where the court observed that a large but finite list of materials, in combination with a teaching of how to carry out the invention, was enabling for purposes of §112. Again, please note that, because of the recitation of “bicyclic” in the current claims, the number of peptides covered is not only “finite,” it is actually very limited.

It should be noted that the requirement for some experimentation and/or screening does not necessarily make a claim non-enabled. “Enablement is not precluded by the necessity for some experimentation such as routine screening. . . . A considerable amount of experimentation is permissible, if it is merely routine . . .” (emphasis added). *In re Wands*, 8 USPQ 2d 1400, 1404 (Fed. Cir. 1988). In the current case, there would not even be a “considerable amount” of testing in view of the very limited number of peptides encompassed by the claims.

In this case, the testing of the compounds to confirm activity would be entirely straightforward. The limited number of truncated peptides could be readily produced and tested by one skilled in the art. The likelihood of these particular bicyclic peptides having activity is evidenced by the attached article by Jia *et al.*, which shows that the bicyclic structure is necessary for activity.

Accordingly, the applicants respectfully request reconsideration and withdrawal of the rejection under 35 USC §112 for lack of enablement.

Claims 1, 7, 13 and 14 have been rejected under 35 USC §112, first paragraph, for failing to comply with the written description requirement. The applicants respectfully traverse this ground for rejection and submit that the claims contain only subject matter that is described in the specification in such a way as to clearly convey to one skilled in the art that the inventors had full possession of the claimed invention.

As discussed above in the context of the enablement rejection under 35 U.S.C. §112, first paragraph, the applicants’ claims are, in fact, rather narrow. Accordingly, the applicants’ disclosure of the full peptide sequence (SEQ ID NO:2), the criticality of the bicyclic structure, the disclosure of fragments, as well as the recitation of a particular activity (and assays for confirming this activity)

clearly establish that the applicants had full possession of the claimed subject matter at the time of filing the subject application. In this regard, the “entire genus” to which the Office Action refers includes about a half dozen peptides.

Accordingly, the applicants respectfully request reconsideration and withdrawal of the written description rejection under 35 U.S.C. §112, first paragraph, because these claims, as presently amended, fully comply with this requirement.

Claims 1, 7, 13 and 14 have been rejected under 35 USC §103(a) as being unpatentable over Li and Kagen (International Publication No. WO 2001/85157-A1) (hereinafter “Li”) in view of Achen *et al.*, U.S. Patent Application Publication No. US 2002/0065218 A1) (hereinafter “Achen”). The applicants respectfully traverse this ground for rejection because the cited references, either taken alone or in combination, do not disclose or suggest the particular advantageous peptides claimed by the current applicants.

It appears from the discussion at Paragraphs 15 and 16 of the outstanding Office Action that the applicants’ previous response may not have successfully conveyed the reasons why the claimed invention is not obvious. Specifically, the applicants have NOT stated that the Li reference teaches the sequence of the claimed peptide. Clearly, Li does not teach this sequence. To the contrary, Li discloses a much longer sequence and makes no mention of the utility of specific shorter sequences.

The Office Action states that the peptide cited in the Li reference has 100% identity with the claimed peptide. It is not clear how this value was calculated. When calculating the relatedness of a 22 amino acid fragment to the full 28 amino acid sequence, the Examiner arrived at 78% homology. Conversely, in making this obviousness rejection, a small fragment of a longer sequence is said to have 100% identity. Clarification is respectfully requested.

In addition to reciting a unique sequence, the applicants’ claims also recite a bicyclic structure, and a specific advantageous utility. None of these attributes are disclosed or suggested by the cited references.

An assertion of obviousness without the required suggestion or expectation of success in the prior art is tantamount to using applicants’ disclosure to reconstruct the prior art to arrive at the

subject invention. Hindsight reconstruction of the prior art cannot support a §103 rejection, as was specifically recognized by the CCPA in *In re Sponnoble*, 56 CCPA 823, 160 USPQ 237, 243 (1969):

The Court must be ever alert not to read obviousness into an invention on the basis of the applicant's own statements; that is we must review the prior art without reading into that art appellant's teachings. *In re Murray*, 46 CCPA 905, 268 F.2d 226, 112 USPQ 364 (1959); *In re Sprock*, 49 CCPA 1039, 301 F.2d 686, 133 USPQ 360 (1962). The issue, then, is whether the teachings of the prior art would, in and of themselves and without the benefits of appellant's disclosure, make the invention as a whole, obvious. *In re Leonor*, 55 CCPA 1198, 395 F.2d 801, 158 USPQ 20 (1968). (Emphasis in original)

Achen does not add any disclosure that would aid a person of skill in identifying the claimed peptide from the sequences taught by Li. Thus, the Achen reference does not cure the aforementioned defects of the primary Li reference.

The cited art provides no teaching or suggestion of the specific advantageous bicyclic peptides claimed by the current applicants. Therefore, the combination of Li and Achen does not render obvious the subject matter of the applicants' claims. Accordingly, the applicants request the withdrawal of the rejection under 35 USC §103(a).

In view of the foregoing remarks and the amendment above, the applicants believe that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 CFR §§1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

The applicants also invite the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



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Attachment: Jia *et al.* article